

# Car Damage Detection using Detectron2

Detect damaged car parts using instance segmentation, mask r-cnn, and the Detectron2 library.

Using the kaggle dataset by LPENKA, there are 59 images for training, 11 for validation, and 8 images for testing

## Screenshots



## How to Run

- Kaggle: Go to [COCO Car Damage Dataset by LPENKA](#), create code with that dataset and import the kaggle notebook.
- Google Collab: [Create your Kaggle API Token](#), upload this notebook to google collab, and dont forget to upload your API Token in the notebook.

## About Detectron2

Detectron2 is Facebook AI Research's next generation library that provides state-of-the-art detection and segmentation algorithms. It is the successor of Detectron and maskrcnn-benchmark. It supports a number of computer vision research projects and production applications in Facebook.

## About Dataset

### Context

The dataset contains car images with one or more damaged parts. The img/ folder has all 80 images in the dataset. There are three more folders train/, val/ and test/ for training, validation and testing purposes respectively.

### Folders

**train/:**

Contains 59 images.

COCO\_train\_annos.json: Train annotation file for damages where damage is the one and only category.

COCO\_mul\_train\_annos.json: Train annotation file for parts having damages. There are five categories of parts based on which part the damage has happened. The parts can be namely, headlamp, front\_bumper, hood, door, rear\_bumper.

**val/:**

Contains 11 images.

COCO\_val\_annos.json: Validation annotation file for damages where damage is the one and only category.

COCO\_mul\_val\_annos.json: Validation annotation file for parts having damages. There are five categories of parts based on which part the damage has happened. The parts can be namely, headlamp, front\_bumper, hood, door, rear\_bumper.

**test/:**

Contains 8 images.

**Annotation files have the following keys:**

"annotations": Contains the bounding box and segmentation array. "categories": Contains the list of categories in the annotation. "images": Details of each image used in the annotation. "info": Creator information "licenses": License information

## Acknowledgements

- [Detectron2 Getting Started Notebook](#)
- [COCO Car Damage Dataset by LPENKA](#)

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